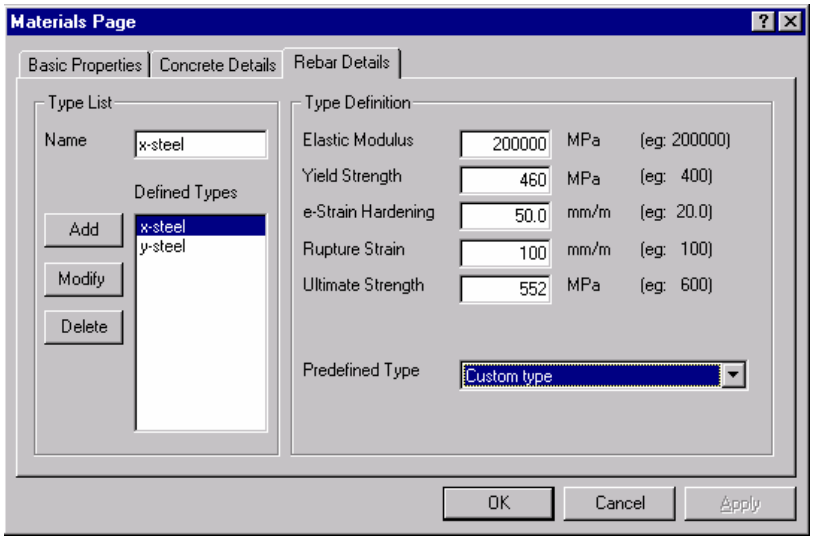


Non-prestressed steel is defined in a similar manner to that above for concrete. Note that the example shown has 2 different types of steel defined. The values currently shown at the right are for the selected "x-steel" type. Clicking on the "y-steel" type would allow that to be edited as well.

The "predefined type" option allows selection from common types of steel defined in Table 2-2, below, along with all the other parameters used in this dialog box.

*Table 2-2 Reinforcement Material Properties Meanings and Default Values*

| Property | Definition | Title | Default Value |
|---|---|---|---|
| Elastic Modulus | Stiffness before yield | E | 200,000 MPa |
| Yield Strength | Proportional limit | $f_y$ | 400 MPa |
| e-strain harden | Strain at strain harden | $\varepsilon_{sh}$ | 7 mm/m |
| Rupture strain | Strain at Ultimate stress. | $\varepsilon_u$ | 10% |
| Ultimate strength | Maximum stress | $f_u$ | 1.5 x $f_y$ |

Curve is linear to yield, flat post yield, and quadratic after strain hardening. Slope is zero at location of maximum stress and strain.

*Predefined Options*

| | E (MPa) | $f_y$ (MPa) | $\varepsilon_{sh}$ (mm/m) | $\varepsilon_u$ (mm/m) | $f_u$ (MPa) |
|---|---|---|---|---|---|
| ASTM A615 40 ksi | 200000 | 276 | 20.0 | 120.0 | 483 |
| ASTM A615 60 ksi | 200000 | 414 | 15.0 | 80.0 | 621 |
| ASTM A706 60 ksi | 200000 | 414 | 15.0 | 120.0 | 552 |
| CSA G30.12 300 MPa | 200000 | 300 | 20.0 | 110.0 | 450 |
| CSA G30.12 400 MPa | 200000 | 400 | 15.0 | 80.0 | 600 |
| CSA G30 400 Weld | 200000 | 400 | 15.0 | 130.0 | 550 |
| 1030 MPa Dywidag | 200000 | 800 | 10.0 | 40.0 | 1030 |
| 1080 MPa Dywidag | 200000 | 820 | 10.0 | 40.0 | 1080 |